

2019-0576

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**RHODE ISLAND RADIATION CONTROL AGENCY  
APPLICATION FOR REGISTRATION  
OF A DIAGNOSTIC X-RAY EQUIPMENT FACILITY**

Category **DEF** Lic. No. **01889** **\*\*FOR AGENCY USE ONLY\*\*** Conditions \_\_\_\_\_

Maria Barnes 11/14/2018 \$ 120.00  
Reviewed By \_\_\_\_\_ Date \_\_\_\_\_ Amount Paid \_\_\_\_\_

INSTRUCTIONS: Subpart B.3 of the Rules and Regulations for the Control of Radiation (R23-1.3-RAD) contains detailed instructions for completing this application. Send the entire completed application to: RI Department of Health, Office of Facilities Regulation, Radiation Control Program, 3 Capitol Hill - Room 305, Providence, RI 02908-5097. You should keep a copy of your completed application and attachments, as they will be incorporated into your registration by reference. Checks should be made payable to RI General Treasurer.

THIS IS AN APPLICATION FOR [Check Appropriate Item] ☒ NEW REGISTRATION  
☐ AMENDMENT TO REGISTRATION # \_\_\_\_\_ ☐ CATEGORY CHANGE TO REGISTRATION \_\_\_\_\_

**Facility Name:**

Please provide the name of the facility (as known to the public) for which you are applying for this license.

Name: The Biomed Center

**Facility Contact Person:**

Please provide the name and telephone number of a person we can contact concerning this facility.

Name: Dr. Gerald Curatola

Phone Number: (603) 377-9981

Email: gcuratola@aol.com

**Facility Mailing Information**

Please provide the mailing information for all communication regarding this license.

(Not published on HEALTH website).

Address Line 1 111 Chestnut St.

Address Line 2 \_\_\_\_\_

Address Line 3 \_\_\_\_\_

Address City, State, Zip Code Providence, RI 02903

Address Country \_\_\_\_\_

Phone: 1-833-624-6633

Fax: \_\_\_\_\_

Email Address: admin@biomedne.com

**Facility Location Information:**

Please provide the location information for this facility.

(Published on HEALTH website).

Address Line 1 111 Chestnut St.

Address Line 2 \_\_\_\_\_

Address Line 3 \_\_\_\_\_

Address City, State, Zip Code Providence, RI 02903

Address Country \_\_\_\_\_

Phone: 1-833-624-6633

Fax: \_\_\_\_\_

Email Address: admin@biomedne.com

**Facility Supervisor Information:**

Name: Dr. Gerald Curatola

Phone Number: 603-377-9981

RI Medical/Dental License Number: DEN033816

Specialty: general dentistry

Medical/Dental Board Certification(s): DDS

Date(s): 1983

**Individual Responsible for Radiation Protection:**

Name: Juliana Rowland

Phone Number: 603-305-5007

Title: Chief Operating Officer

Email: Juliana.rowland@biomedne.com

RECEIVED

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FACILITIES REGULATION

Consulting Radiation Protection Service [if applicable]:	Name: <u>Lanham Medical Physics William DeForest</u> RI Registration#: <u>RPS 0082</u>				
Ownership Type: Please check ONE	<input type="checkbox"/> Corporation <input checked="" type="checkbox"/> Limited Liability Company <input type="checkbox"/> Governmental Entity <input type="checkbox"/> Partner <input type="checkbox"/> Sole Proprietorship <input type="checkbox"/> Partnership <input type="checkbox"/> Limited Partnership				
Ownership Information: Please provide ownership information for the Sole Proprietorship, Partnership, Limited Partnership, Corporation, Limited Liability Company or Governmental Entity.	Name: <u>American Center for BioRegulatory Medicine and Dentistry, LLC</u> Address: <u>111 Chestnut St. Providence RI 02903</u> DBA: <u>The BioMed Center</u> Phone: <u>401-443-4007</u>				
<b>THE CUSTOMARY AND USUAL RADIOGRAPHIC PROCEDURES PERFORMED AT THE FACILITY ARE:</b> [Check ALL Applicable Items]					
<div style="display: flex; flex-wrap: wrap;"> <div style="width: 33%;"><input type="checkbox"/> 0. None: equipment stored</div> <div style="width: 33%;"><input type="checkbox"/> 6. Chiropractic</div> <div style="width: 33%;"><input type="checkbox"/> 12. CT</div> <div style="width: 33%;"><input type="checkbox"/> 1. Dental Intraoral</div> <div style="width: 33%;"><input type="checkbox"/> 7. Veterinary</div> <div style="width: 33%;"><input type="checkbox"/> 13. Bone Densitometry</div> <div style="width: 33%;"><input checked="" type="checkbox"/> 2. Dental Extraoral</div> <div style="width: 33%;"><input type="checkbox"/> 8. General Radiographic</div> <div style="width: 33%;"><input type="checkbox"/> 14. Specific Radiography (Specify)</div> <div style="width: 33%;"><input type="checkbox"/> 3. Cephalometric</div> <div style="width: 33%;"><input type="checkbox"/> 9. Fluoroscopic</div> <div style="width: 33%;"><input type="checkbox"/> 4. Chest and/or Extremities</div> <div style="width: 33%;"><input type="checkbox"/> 10. Mammographic</div> <div style="width: 33%;"><input type="checkbox"/> 5. Podiatric</div> <div style="width: 33%;"><input type="checkbox"/> 11. Contrast Media Studies</div> </div>					
<b>DIAGNOSTIC X-RAY SYSTEMS INFORMATION:</b> Provide the requested information for each diagnostic X-ray system at the facility.					
Unit #*	Manufacturer	Model	# of Tubes	Location	Use**
	Sirona	R25	1	Imaging 142	4-see report attached
*Unit # used to identify X-ray equipment should also be used to identify that same X-ray equipment in the shielding evaluation. **Use: Indicate the use of the equipment by inserting the number of the radiographic procedure listed. [Continue on plain 8 1/2" by 11" paper if necessary.]					
<b>SHIELDING EVALUATION:</b> The type and scope of information to be provided is described in Appendix A to part B of the <u>Rules and Regulations for the Control of Radiation [R23-1.3-RAD]</u> . <u>see report attached</u>					
FEIN Number: (Federal Employer Identification Number)	Pursuant to Chapter 75 of Title 5 of the Rhode Island General Laws, as amended, any person applying for or renewing any license, permit, or other authority to conduct a business or occupation within Rhode Island must have filed all required state tax returns and paid all taxes due the state or must have entered into a written installment agreement to pay delinquent state taxes that is satisfactory to the Tax Administrator.				
Note: If you are a sole proprietor this number may be your Social Security Number.	Please provide below FEIN/SSN for this license: F.E.I.N./SSN Number: <u><del>000000000</del></u>				
<b>CERTIFICATION [Must be completed by applicant]:</b> The applicant and any official executing this certification on behalf of the applicant, certify that this application is prepared in conformity with the <u>Rhode Island Rules and Regulations for the Control of Radiation [R23-1.3-RAD]</u> , and that all information contained herein is correct to the best of their knowledge and belief.					
<u>[Signature]</u> Date: <u>11/7/18</u>		<u>Dr. Gerald Cusatola</u> (Type or Print Name of Certifying Official)			
<u>[Signature]</u> Date: <u>11/7/18</u>		Title: _____			
<b>FACILITY SUPERVISOR:</b> _____ [If different from Certifying Official]: (Signature) _____ (Date) _____					

FORM RCA-R1 (December 2010)

Replaces Form RCA-R1 (January 2006) Which Is Obsolete

# LANDAUER<sup>®</sup>

MEDICAL PHYSICS

April 27, 2018

Dr. Gerry Curatola  
ACBMD Providence Center  
111 Chestnut Street  
Providence, RI 02903  
Telephone: 212-355-4777  
Email: gcuratola@aol.com

**RE: DIAGNOSTIC X-RAY ROOM SHIELDING DESIGN REPORT**

Dear Dr. Curatola,

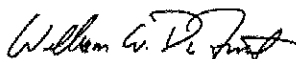
Enclosed please find the shielding design report for the Sirona Orthophos SL 3D x-ray installation at the address shown above.

- Please review the report carefully to ensure all submitted information was correctly interpreted and to notify us of any revisions that need to be addressed.
- We have filed a copy of the report with the Rhode Island Department of Health on your behalf and you should receive correspondence from that agency shortly regarding approval and registration.
- Landauer's recommendations are based upon the state regulations:  
State of Rhode Island and the Providence Plantations, Department of Health Rules and Regulations for the Control of Radiation
- The state regulations are available for review on the following website address:  
<http://www.health.ri.gov/programs/radiologicalhealth/index.php>
- Retain a copy of the report to document the calculated shielding required to meet dose limits prescribed in State of Rhode Island and the Providence Plantations, Department of Health Rules and Regulations for the Control of Radiation, R23-1.3-
- State of Rhode Island and the Providence Plantations, Department of Health Rules and Regulations for the Control of Radiation, R23-1.3-RAD A.2.2(a) requires you to develop, document, and implement a Radiation Protection Program.

If you would like assistance with **post-installation radiation survey requirements** and/or with developing a **site-specific Radiation Protection Program**, please request a quote by contacting our team of Shield Design Coordinators at (800) 525-2831 or by emailing them at [shieldingdesign@landauermmp.com](mailto:shieldingdesign@landauermmp.com). They are also available to answer any other questions you may have with this Shield Design Report.

Thank you for choosing Landauer Medical Physics as your radiation protection service provider.

Sincerely,



Bill DeForest, MS, CHP, DABR  
Health Physicist  
LANDAUER Medical Physics

**"LANDAUER is here to help you as your resource for radiation safety services!!"**

# LANDAUER®

## MEDICAL PHYSICS

April 27, 2018

Rhode Island Department of Health  
Office of Facilities Regulation, Radiation Control Program  
3 Capitol Hill - Room 305  
Providence, RI 02908-5097  
T: (401) 222-2231  
F: (401) 222-5901

Dear Program Director,

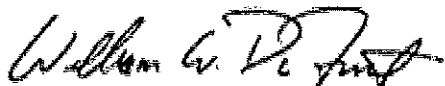
Enclosed please find a copy of the Diagnostic X-Ray Room Shielding Design Report for:

Facility Name:	ACBMD Providence Center						
Facility Address:	111 Chestnut Street, Providence, RI 02903						
Contact:	Dr. Gerry Curatola						
Mailing Address:	111 Chestnut Street, Providence, RI 02903						
Contact Telephone:	212-355-4777						
Contact Fax:	N/A						
Contact Email:	<a href="mailto:gcuratola@aol.com">gcuratola@aol.com</a>						
Facility Type:	Dental						
Machine Type:	Sirona Orthophos SL 3D						
Facility Workload:	<table><thead><tr><th>Imaging Mode</th><th>scans/week</th></tr></thead><tbody><tr><td>CBCT 3D SD</td><td>3</td></tr><tr><td>Pan</td><td>6</td></tr></tbody></table>	Imaging Mode	scans/week	CBCT 3D SD	3	Pan	6
Imaging Mode	scans/week						
CBCT 3D SD	3						
Pan	6						

Should you have any questions regarding this shielding plan, please contact our team of Shield Design Coordinators at (800) 525-2831 or e-mail them at [shieldingdesign@landauermmp.com](mailto:shieldingdesign@landauermmp.com).

Thank you for your attention to this matter.

Sincerely,



Bill DeForest, MS, CHP, DABR  
Health Physicist  
LANDAUER Medical Physics

## PLAN REVIEW SHIELDING REPORT

## Shielding Recommendations: Sirona Orthophos SL 3D

Wall Section	Protected Area	Type	Calculated Shielding (per NCRP 147)	LMP Recommended Shielding
A-B	Operator	SC	None	<b>Door:</b> Any door with interlock <b>Window:</b> 1/4" plate glass is adequate See Notes 1 & 2.
B-C	Closets	SU	None	1.25" gypsum is adequate; see Note 1.
B-C	Sterilization	SU	None	1.25" gypsum is adequate; see Note 1.
C-D	Sterilization	SU	None	1.25" gypsum is adequate; see Note 1.
D-E	Greeting Mgr.	SU	0.05 in. Gypsum	1.25" gypsum is adequate; see Note 3.
E-A	Sirona PC	SU	None	1.25" gypsum is adequate; see Note 1.
Ceiling	Adjacent Tenant	SU	None	Existing construction is adequate; see Note 1.
Floor	Ground	SU	None	Existing construction is adequate; see Note 1.

P = primary barrier; S = secondary barrier; C = controlled area; U = uncontrolled area

## Sirona Orthophos SL 3D Imaging Mode Output Calculation Parameters

Imaging Mode	N <sub>weekly</sub> (# scans)	K <sub>sec</sub> <sup>1</sup> (mR @ 1m)	Max kVp
CBCT 3D SD	3	0.41	90
Pan	6	0.23	

Design Goal Dose Limits: Uncontrolled - 2 mrem/week (100 mrem/year); Controlled - 10 mrem/week (500 mrem/year)

## Additional Variables &amp; Calculated Transmission Factor

Wall Section	CBCT Distance (m)	Ceph Distance (m)	P <sub>Design Goal</sub> (mR/week)	Occupancy Factor T	K <sub>sec</sub> (0) (mR/week)	* Transmission Factor B(x) <sub>barrier</sub>
A-B (Operator)	1.3	N/A	10	1	1.60	6.23
B-C (Closets)	1.0	N/A	2	1/20	2.60	15.36
B-C (Sterilization)	1.4	N/A	2	1/2	1.40	2.86
C-D (Sterilization)	1.3	N/A	2	1/2	1.53	2.61
D-E (Greeting Mgr.)	1.1	N/A	2	1	2.19	0.91
E-A (Sirona PC)	1.2	N/A	2	1	1.68	1.19
Ceiling (Adjacent Tenant)	2.7	N/A	2	1	0.35	5.75
Floor (Ground)	1.5	N/A	2	1/40	1.13	70.82

\* NCRP 147 Transmission Factor, B(x):

$$B_{sec}(x) = (P/T) d_{sec}^2 / K_{sec}^1 * N = (P/T) / K_{sec}(0)$$

**Definition of Terms**

$N_{\text{weekly}}$  - number of patient scans for the imaging mode per week

$K_{\text{sec}}^1$  - unattenuated air kerma measured at 1 meter from source per imaging mode scan

$K_{\text{sec}}(0)$  - total weekly unattenuated air kerma at point of interest from source for all patient scans

$D_{\text{barrier}}$  - shortest distance to the barrier of interest

$T$  - Occupancy factor (hours per week a person spends in the protected area)

$P_{\text{week}}$  - Design Goal or exposure limit per week

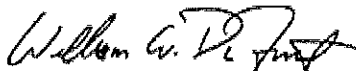
$B(x)_{\text{barrier}}$  - radiation transmission through a given barrier material (x)

**Table Notes and Additional Information**

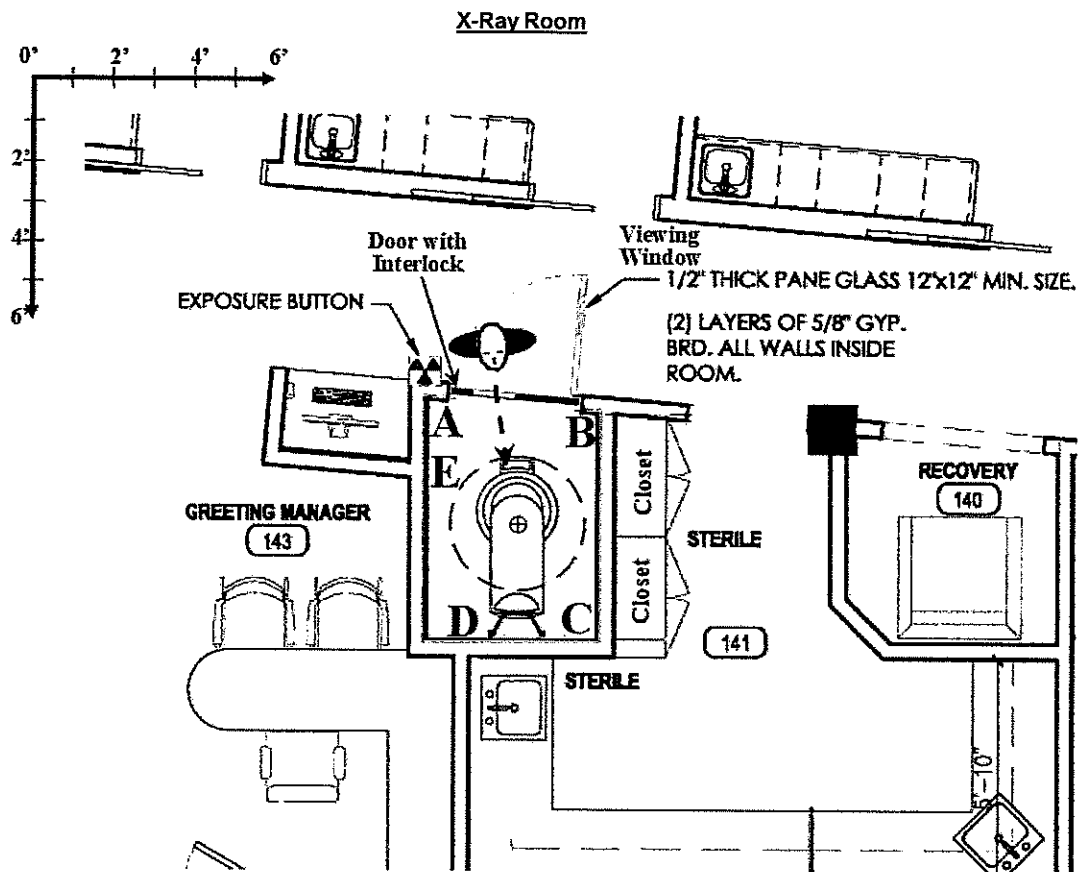
- **IMPORTANT** - This plan review is specific for the information provided by the requestor. Any changes in equipment, room layout, occupancy of adjacent areas, changes in x-ray workload, upgrades to additional imaging modalities, changes in field size of imaging receptors, or any other condition that may contribute to an increased risk of radiation exposure will require re-evaluation of the shielding by a qualified physicist. If there are any doubts about what may constitute a change, please contact LANDAUER Medical Physics.
- **Note 1** - The calculated dose at this section of the floor plan and areas beyond this section is less than the regulatory occupational or public dose limits. Any planned/existing construction or controlled access to the area further reduces occupational and public dose.
- **Note 2 - Rhode Island regulation:** Stationary X-ray systems shall be **required** to have the **X-ray control permanently mounted in a protected area so that the operator is required to remain in that protected area during the entire exposure.** {State of Rhode Island and the Providence Plantations, Department of Health Rules and Regulations for the Control of Radiation, R23-1.3-RAD F.5(11)(a)}
  - **To ensure compliance with the above regulation, the installation of a door interlock mechanism is recommended which will interrupt the x-ray exposure circuit if the door is opened at any time during an exposure, requiring the operator to remain in a protected area during exposures.**
- **Note 3** - Any recommended shielding material is based upon the total thickness of Calculated Shielding material for the floor plan section to reduce the radiation dose below regulatory limits. Example: 1.25" of gypsum recommendation is met if there is 5/8" gypsum on each side of the wall. **If the existing material thickness is greater than the Calculated Shielding material thickness, then no additional shielding material is needed.**
- Details of access control should be documented in a written Radiation Protection Program. The state agency reserves the right to impose additional requirements, as it deems appropriate or necessary to minimize danger to public health, safety or property. each side of the wall.
- The occupancies of areas beyond the immediate adjacent space to the barrier of interest have been considered when determining shielding recommendation.
- The recommended shielding is the total thickness of specified material needed to reduce the radiation dose below regulatory limits.

- Prior to construction of all new installations, or modifications of existing installations, or installation of equipment into existing facilities utilizing X-rays for diagnostic or therapeutic purposes, the floor plans and equipment arrangements shall be submitted to the agency for review and verification that national standards have been met.
- **Wall shielding should extend up from the finished floor to a height of at least 84". This is the routinely commercially available height for shielding.**
- All shielded barriers, including view windows and frames, doors and door frames, should be of the specified shielding equivalencies or greater and should have no voids.
- Any penetrations in the shielding should be designed to afford the same shielding equivalency as specified for that barrier. Penetrations in the shielding (electrical boxes, cables, fasteners, etc.) should be secured in place with mechanical fasteners or by welding. Metal screws do not require lead caps and the use of tapes, adhesives or plastic materials as a fastener is not recommended.
- Unless otherwise stated, the calculated dose at areas beyond the noted protected areas are less than the regulatory occupational or public dose limits. Any planned/existing construction or controlled access to the area further reduces occupational and public dose.
- Landauer Medical Physics performs transmission calculations based on the information provided by the requestor's Shield Design application and cannot be held responsible for errors in shielding requirements due to inaccurate information.
- These shielding specifications have been prepared in accordance with guidelines set forth in National Council on Radiation Protection and Measurements Report(s) No. 145 & No. 147, and Rhode Island state regulations.
- The State agency reserves the right to impose additional requirements, as it deems appropriate or necessary to minimize danger to public health, safety or property.

**Shielding Calculations Performed by:**



Bill DeForest, MS, CHP, DABR  
Health Physicist  
LANDAUER Medical Physics


**Shielding Recommendations: Sirona Orthophos SL 3D**

Wall Section	Barrier Type	LMP Recommended Shielding (For Contractor)
A-B (Operator)	Door / Window	Door: Any door with interlock Window: 1/4" plate glass is adequate
B-C (Closets)	Wall	1.25" gypsum is adequate
B-C (Sterilization)	Wall	1.25" gypsum is adequate
C-D (Sterilization)	Wall	1.25" gypsum is adequate
D-E (Greeting Mgr.)	Wall	1.25" gypsum is adequate
E-A (Sirona PC)	Wall	1.25" gypsum is adequate
Ceiling (Adjacent Tenant)	Ceiling	Existing construction is adequate
Floor (Ground)	Floor	Existing construction is adequate



## Floor Plan

